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SPECIFICATION

OF

JOHN HENRY JOHNSON.

ARTIFICIAL DENTURES.

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Artificial Dentures.

LETTERS PATENT to John Henry Johnson, of 47, Lincoln's Inn Fields, in the County of Middlesex, Gentleman, for the Invention of "**IMPROVEMENTS IN ARTIFICIAL DENTURES AND IN BASES FOR THE SAME.**"—
A communication from abroad by Thomas Alder Dickson Forster, of Philadelphia, Pennsylvania, United States of America.

Sealed the 23rd April 1872, and dated the 23rd November 1871.

PROVISIONAL SPECIFICATION left by the said John Henry Johnson at the Office of the Commissioners of Patents, with his Petition, on the 23rd November 1871.

I, JOHN HENRY JOHNSON, of 47, Lincoln's Inn Fields, in the County
5 of Middlesex, Gentleman, do hereby declare the nature of the said
Invention for "**IMPROVEMENTS IN ARTIFICIAL DENTURES AND IN BASES FOR THE
SAME,**" a communication to me from abroad by Thomas Alder Dickson
Forster, of Philadelphia, Pennsylvania, United States of America, to be
as follows:—

10 This Invention consists in manufacturing artificial dentures having
bases wholly or partly of composition, in the peculiar manner described

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hereafter, with the view to the attainment of economy both as regards the cost of the materials used and the process of converting the same into artificial dentures.

Also in making bases of artificial teeth either in whole or in part of oxychloride of zinc, which during the process of manufacture can be 5 manipulated while cold, and therefore more easily and rapidly treated than the compositions which have to be manipulated while hot.

The object of the first part of this Invention is to economise the manufacture of artificial dentures having composition bases or bases partly of composition and partly of metal, by dispensing entirely with the 10 costly porcelain teeth and blocks of teeth having tinted extensions, which form imitations of the gums heretofore employed.

The said Invention has also for its object a more perfect representation of the exposed portion of the gums. This is accomplished by using single plain teeth, and by tinting that portion of the composition base 15 which represents the exposed gums.

When carrying this Invention into effect, in connection with hard rubber, it is proposed to embed in the usual manner in the base of that composition the fangs of cheap single teeth while the material is in a plastic state, the rubber being subsequently hardened. Instead of relying 20 upon the usual tinted extensions of the teeth to form and imitate the exposed portions of the gums, the latter are formed in the mould on and as a part of the base itself, but as the base is not of appropriate tint a varnish or enamel is used, consisting generally of gun cotton dissolved in ether or its equivalent mixed with carmine or other appropriate color to 25 impart the desired tint. This enamel is spread over the exposed portion of the base, becomes thoroughly incorporated with the same, and independently of the color imparted presents a highly polished surface, bearing a more close resemblance to the natural gum, owing to its uniform continuity and exactitude of shape as derived from the mould, 30 than any tinted extension of ordinary porcelain teeth, which demand such tedious manipulation before they can be jointed to approximately represent a continuous gum surface.

The color of a collodion or celluloid base bears a closer resemblance to the color of the gums than an ordinary rubber base, so close a resemblance 35 in fact that in some cases a transparent colorless enamel of gun cotton and ether may be used to impart the desired polish and brilliancy, or the

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varnish may be slightly colored to graduate the tint already existing in the base.

The improved composition for bases consists of oxychloride of zinc, made by mixing together oxide and chloride of zinc in such proportions
5 as to form a plastic mass, and so coloring the same that the composition will represent as nearly as possible the natural color of the gum.

The teeth are mounted on wax or gutta percha in the usual manner, and are embedded in the plaster of a sectional mould, and after the removal of the wax the plastic material is introduced in its place and
10 retained within the mould until the material is hardened, the whole process being conducted without the application of heat. Finely powdered ground silex, or other equivalent material, may be added to the oxychloride so as to give body and additional strength to the same.

In connection with the improved oxychloride base it is preferred to
15 use single plain teeth, and to form the imitation of the exposed portion of the gum on the base by tinting if necessary and enamelling the same, as herein-before described. The oxychloride may form a portion only of the base; it may for instance be backed with metal, or the greater portion of the base may consist of metal to which the teeth are united
20 by oxychloride, which forms the imitation of the exposed portion of the gums.

Prior to the application of the enamel to the oxychloride base the latter is coated with a solution of gum sandarac or other equivalent resinous gum, which acts as a medium for causing the adhesion of the
25 enamel.

The essential features of this Invention are:—

First. A peculiar artificial denture having a base wholly or partly of composition, and a mode of imitating the natural gum, formed of and composing a part of the said composition.

30 Second. An artificial denture in which plain single teeth are embedded in a composition base of which a portion is made in imitation of the exposed portion of the natural gums.

Third. An artificial denture the base of which is composed wholly or in part of oxychloride with or without other ingredients.

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Fourth. The said oxychloride base tinted to represent the natural color of the gums.

Fifth. The coating of composition bases or parts of the same with an enamel consisting of gun cotton and ether or equivalent solvent, which will act as a partial solvent of the base to which it is applied. 5

Sixth. The employment of the said enamel tinted to imitate the natural color of the gums.

Seventh. The application of gum sandarac or its equivalent to oxychloride bases prior to the application of the said varnish or enamel to the same. 10

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said John Henry Johnson in the Great Seal Patent Office on the 21st May 1872.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, JOHN HENRY JOHNSON, of 47, Lincoln's Inn Fields, in the County of Middlesex, Gentleman, send greeting. 15

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Twenty-third day of November, in the year of our Lord One thousand eight hundred and seventy-one, in the thirty-fifth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said John Henry Johnson, Her special license that I, the said John Henry Johnson, my executors, administrators, and assigns, or such others as I, the said John Henry Johnson, my executors, administrators, or assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "**IMPROVEMENTS IN ARTIFICIAL DENTURES AND IN BASES FOR THE SAME,**" a communication to me from abroad by Thomas Alder Dickson Forster, of Philadelphia, Pennsylvania, United States of America, upon the condition (amongst others) that I, the said John Henry Johnson, my executors or administrators, by an instrument in writing under my hand and seal, should particularly 20 25 30

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describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

5 **NOW KNOW YE**, that I, the said John Henry Johnson, do hereby declare the nature of the said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement, that is to say :—

10 The said Invention consists in manufacturing artificial dentures having bases wholly or partly of composition, in the peculiar manner described hereafter, with the view to the attainment of economy both as regards the cost of the materials used and the process of converting the same into artificial dentures.

15 Also in making bases of artificial teeth either in whole or in part of oxychloride of zinc, which during the process of manufacture can be manipulated while cold, and therefore more easily and rapidly treated than the compositions which have to be manipulated while hot.

20 In making artificial dentures with bases of hard rubber, celluloid, or other composition, it has been the invariable practice to embed porcelain teeth, extended and tinted so as to assume both the shape and color of the exposed portion of the gums into the material while it is in a plastic state, and to subsequently harden the material. United groups or blocks of teeth thus extended and tinted so as to represent both teeth and gums are generally employed in the formation of artificial dentures,
25 and much tedious manipulation is demanded in jointing the blocks together so as to represent a continuous surface similar to that of the natural gum.

30 Porcelain teeth extended and tinted to imitate the color of the gums, and especially blocks of such teeth, are moreover double or nearly double the expense of plain teeth which can be much more easily fitted together.

35 The object of the first part of this Invention is to economize the manufacture of artificial dentures having composition bases, or bases partly of composition and partly of metal, by dispensing entirely with the costly porcelain teeth and blocks of teeth, having tinted extensions which form imitations of the gums heretofore employed.

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The said Invention has also for its object a more perfect representation of the exposed portion of the gums. This is accomplished by using single plain teeth, and by tinting that portion of the composition base which represents the exposed gums.

When carrying this Invention into effect in connection with hard 5 rubber it is proposed to embed in the usual manner in the base of that composition the fangs of cheap single teeth, while the material is in a plastic state, the rubber being subsequently hardened. Instead of relying upon the usual tinted extensions of the teeth to form and imitate the exposed portions of the gums, the latter are formed in the 10 mould on and as a part of the base itself, but as the base is not of appropriate tint it is proposed to use a varnish or enamel consisting generally of gun cotton dissolved in ether or its equivalent, mixed with carmine or other appropriate color to impart the desired tint. This enamel is spread over the exposed portion of the base, becomes thoroughly incor- 15 porated with the same, and independently of the color imparted presents a highly polished surface bearing a more close resemblance to the natural gum, owing to its uniform continuity and exactitude of shape as derived from the mould, than any tinted extensions of ordinary porcelain teeth, which demand such tedious manipulation before they can be jointed to 20 approximately represent a continuous gum surface.

The color of a collodion or celluloid base bears a closer resemblance to the color of the gums than an ordinary rubber base, so close a resemblance in fact that in some cases a transparent colorless enamel of gun cotton and ether may be used to impart the desired polish and 25 brilliancy, or the varnish may be slightly colored to graduate the tint already existing in the base.

The second part of my Invention relates to a composition for the bases of artificial dentures. This improved composition for bases consists of oxychloride of zinc, made by mixing together oxyide and chloride of zinc 30 in such proportions as to form a plastic mass, and so coloring the same that the composition will represent as nearly as possible the natural color of the gum.

The teeth are mounted on wax or gutta percha in the usual manner, and are imbedded in the plaster of a sectional mould, and after the 35 removal of the wax the plastic material is introduced in its place and retained within the mould until the material is hardened, the whole

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process being conducted without the application of heat. Finely powdered ground silex, or other equivalent material, may be added to the oxychloride so as to give body and additional strength to the same.

In connection with the improved oxychloride base it is preferred to
5 use single plain teeth, and to form the imitation of the exposed portion of the gum on the base by tinting, if necessary, and enamelling the same, as herein-before described in reference to the first part of this Invention. The oxychloride may form a portion only of the base, it may for instance be backed with metal, or the greater portion of the base may consist of
10 metal, to which the teeth are united by oxychloride, which forms the imitation of the exposed portion of the gums.

Prior to the application of the enamel to the oxychloride base the inventor coats the latter with a solution of gum sandarac or other equivalent resinous gum, which acts as a medium for causing the
15 adhesion of the enamel.

Having now described and particularly ascertained the nature of the said Invention, and the manner in which the same is or may be used or carried into effect, I would observe in conclusion that what I consider to be novel and original and therefore claim as the Invention secured to me
20 by the herein-before in part recited Letters Patent is,—

First. An artificial denture having a base wholly or partly of composition, and the imitation of the natural gum formed of and composing a part of the said composition, as herein-before set forth for the purpose specified.

25 Second. An artificial denture in which plain single teeth are imbedded in a composition base of which a portion is made in imitation of the exposed portion of the natural gums.

Third. An artificial denture the base of which is composed wholly or in part of oxychloride, with or without other ingredients.

30 Fourth. The use of the said oxychloride base tinted to represent the natural color of the gums.

Fifth. The coating of composition bases or parts of the same with an enamel consisting of gun cotton and ether or equivalent solvent, which will act as a partial solvent of the base to which it is applied.

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Sixth. The employment of the said enamel tinted to imitate the natural color of the gums.

Seventh. The application of gum sandarac, on its equivalent, to oxy-chloride bases prior to the application of the said varnish or enamel to the same, for the purpose specified. 5

In witness whereof, I, the said John Henry Johnson, have to this my Specification set my hand and seal, the Eighteenth day of May One thousand eight hundred and seventy-two.

J. HENRY JOHNSON. (L.S.)

LONDON:

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